

CLAIMS

What is claimed is:

1. A method for the extraction and desorption of at least one analyte in an analyte-bearing sample, said method comprising:
 - providing a tubular member sized for communication with an analytical device;
 - coating an interior surface of said tubular member with a sorptive coating;
 - injecting said analyte-bearing sample into said coated tubular member;
 - sorptively extracting said at least one analyte from said analyte-bearing sample;
 - removing said analyte bearing sample from said coated tubular member;
 - desorbing said analyte from said coated tubular member; and
 - introducing said desorbed analyte into said analytical device.
2. The method of claim 1, wherein:
 - said analytical device is a gas chromatograph;
 - said gas chromatograph having an injection port housing;
 - said injection port housing receiving said tubular member therein.
3. The method of claim 1, wherein said sorptive coating comprises at least one selection from the group consisting of:
 - (a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;
 - (b) a porous layer;
 - (c) other immobilized polymers above their glass transition temperature;
 - (d) an immobilized porous polymer;
 - (e) a sol gel; and
 - (f) an immobilized adsorbent.
4. The method of claim 3, wherein:
 - said injection step includes connecting said coated tubular member to a vessel;
 - said vessel containing said analyte-bearing sample; and
 - said removing step includes separating said coated tubular member from said vessel.
5. The method of claim 3, wherein:

said analytical device is a gas chromatograph;
said gas chromatograph having an injection port housing;
said injection port housing receiving said tubular member therein.

6. A method for the extraction and desorption of at least one analyte in an analyte-bearing sample, said method comprising:

providing a tubular member sized for communication with an analytical device;
coating an interior surface of said tubular member with a sorptive coating;
said sorptive coating comprising at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

(b) a porous layer;

(c) other immobilized polymers above their glass transition temperature;

(d) an immobilized porous polymer;

(e) a sol gel; and

(f) an immobilized adsorbent;

injecting said analyte-bearing sample into said coated tubular member;
sorptively extracting said at least one analyte from said analyte-bearing sample;
removing said analyte bearing sample from said coated tubular member;
desorbing said analyte from said coated tubular member;
introducing said desorbed analyte into said analytical device;
said analytical device is a gas chromatograph;
said gas chromatograph having an injection port housing; and
said injection port housing receiving said tubular member therein.

7. A tubular member for performing extraction and desorption, said tubular member comprising:

an inlet, an outlet, and a passageway therethrough;

said passageway providing fluid communication from said inlet to said outlet;

said passageway defined by an interior surface;

said interior surface coated with a sorptive coating; and

said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

(b) a porous layer;

(c) other immobilized polymers above their glass transition temperature;

(d) an immobilized porous polymer;

(e) a sol gel; and

(f) an immobilized adsorbent.

8. The device in claim 7, further comprising:

said interior surface having a uniformly smooth surface.

9. The device in claim 7, further comprising:

said interior surface having an irregular surface.

10. The device of claim 7, wherein:

said tubular member is received into the injection port housing of a gas

chromatograph.

11. A tubular member for performing extraction and desorption, said tubular member comprising:

an inlet, an outlet, and a passageway therethrough;

said passageway providing fluid communication from said inlet to said outlet;

said passageway defined by an interior surface;

said interior surface having a uniformly smooth surface;

said interior surface coated with a sorptive coating; and

said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.

12. A tubular member for performing extraction and desorption, said tubular member comprising:

an inlet, an outlet, and a passageway therethrough;
said passageway providing fluid communication from said inlet to said outlet;
said passageway defined by an interior surface;
said interior surface having an irregular surface;
said interior surface coated with a sorptive coating; and
said sorptive coating comprises at least one selection from the group consisting of:

(a) an immobilized polysiloxane polymer, having two attached functional groups, wherein the first attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl, and the second attached functional group is selected from the group consisting of: alkyl, alkenyl, alkynyl, aryl, alkylaryl, alkenylaryl, alkynylaryl, haloalkyl, and haloaryl;

- (b) a porous layer;
- (c) other immobilized polymers above their glass transition temperature;
- (d) an immobilized porous polymer;
- (e) a sol gel; and
- (f) an immobilized adsorbent.